



next computing, next communication

# DVTS on Public Service

**NextCom K.K.**

**Hisaharu Shimazu**

## e-Japan Project (Super-Fast Network)

It is necessary to develop ultra HIGH-SPEED Internet with the optical fiber networking

The TV conference is the only application of which admitted by regional Intranet

The net of running own business effective is used by DVTS TV conference system.

The DVTS TV conferencing system is the best solution for the municipality.

***Real Time Beautiful Reasonable***

## DV

The image deterioration of the DV (Digital Video) is less than MPEG2

## DVoverIP

DVoverIP is the technology which developed to exchange high-quality DV data on the IP network. The signal of the digital video can be delivered as it is without deterioration.

## DVTS was born by WIDE Project

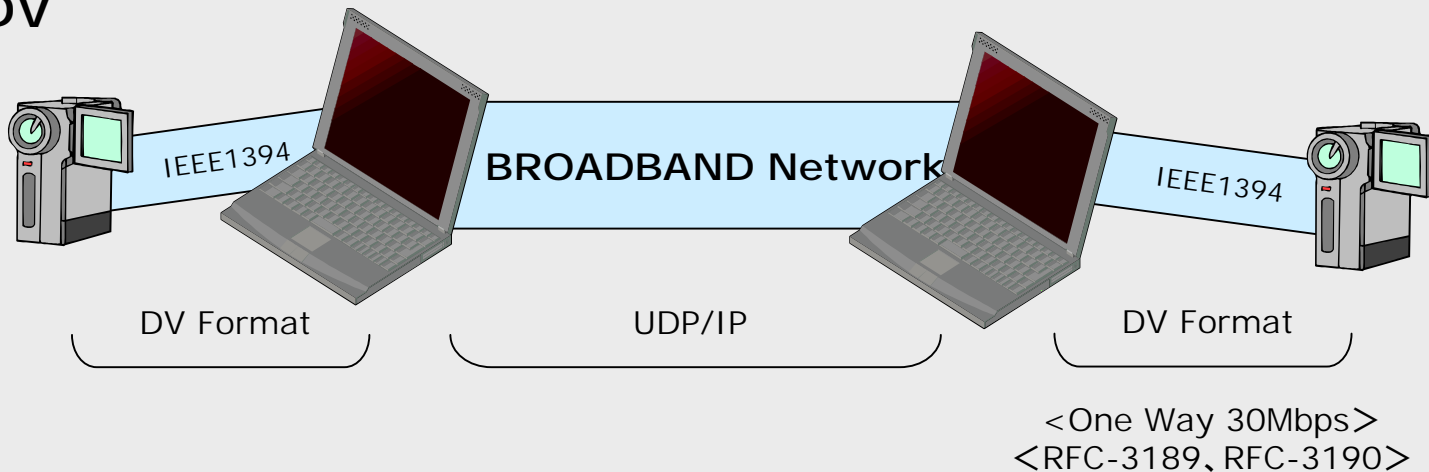
WIDE is a project of research in Japan. It's organized in 1988, and being pulled by Prof. Murai of Keio University.

URL: <http://www.wide.ad.jp/>

### Comparison DV and MPEG-2

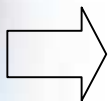
Comparison	DV	MPEG-2
Bandwidth	30Mbps	2~30Mbps
Compression Rate	1/5	1/50
Compression Algorithm	Within frame	Between fr
Deterioratiooon on Congestion	<b>Non</b>	<b>Effect</b>
Deterioratiooon	<b>Less</b>	<b>Much</b>

## High-quality Movie conversation by DV



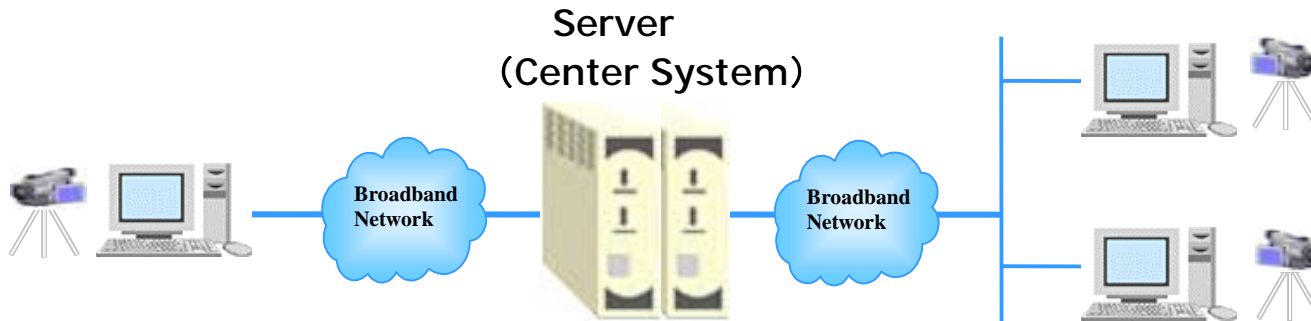
- DV(Digital Video) transferring software on IP network.
- Spread activity of DVTS: WIDE、DVTS Consortium
- 1on1、1on N (Multi Cast)

## Best Advantage of DVTS



The high-definition video communication with non-compression between frame to frame at low price

Achievement of various services are provided by Center Servercontrol



## 1) Multi Cast Service

Reservation function between bases and many selected base.

## 2) Movie Relay・Preservation delivery Service

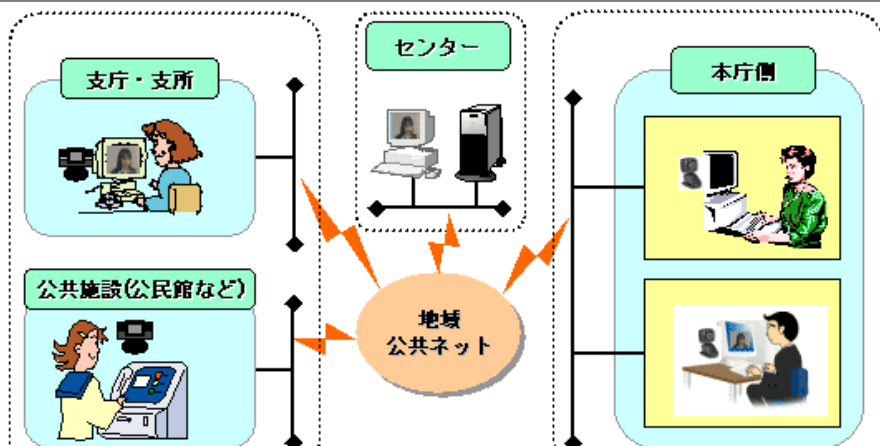
Delivery and preservation of other multiple base from specific base.

## 3) Image chat channel service

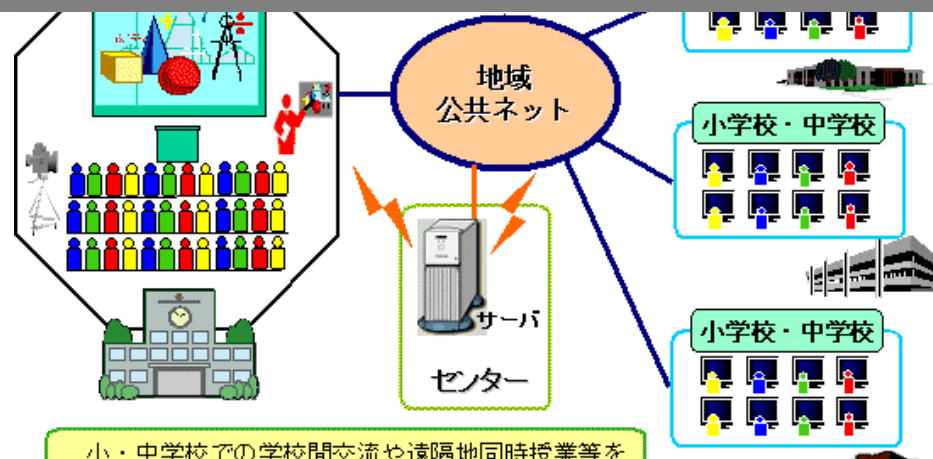
Window selection by menu and automatic connection to empty window

## Sample of DVTS System(Ohzu-Kita)

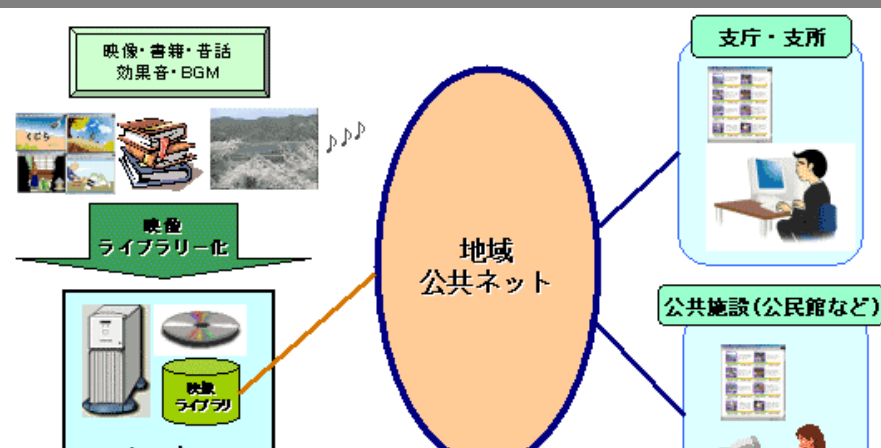
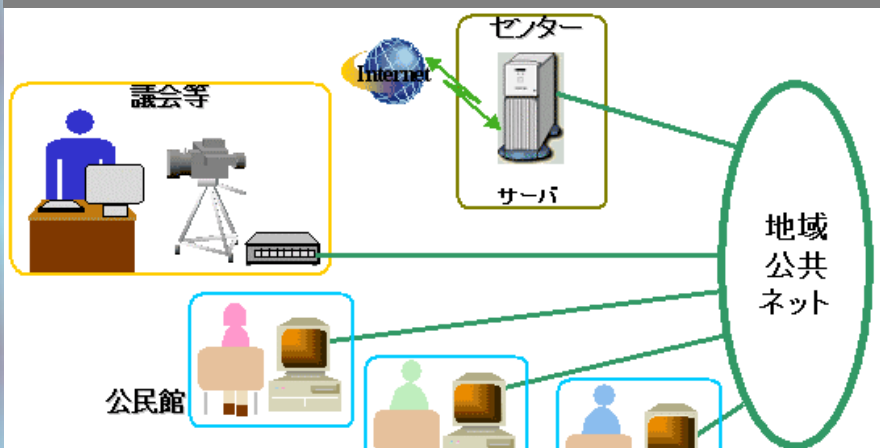
### ①Public Information System



### ②TV Conference System



### ③Education Live Broadcasting System ④On Demand E-Learning



Services are provided by the center server

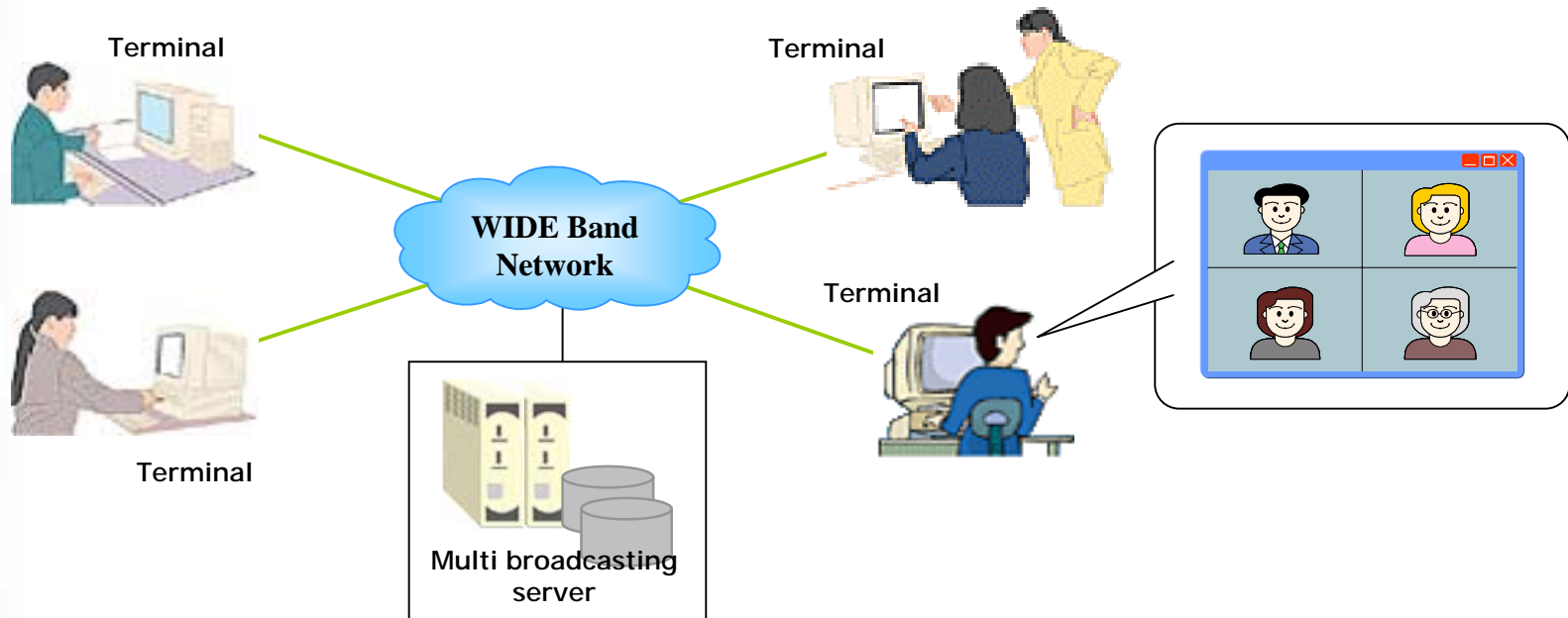
## Functions

- IP Authentication Function
- 4 Point TV Conferences
- Multi Broadcasting
- P to P Real time 20 conversations
- Contents Delivery

## Features

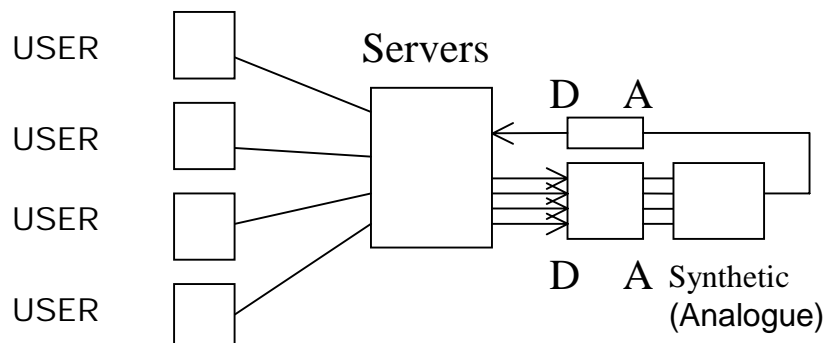
- Hight Quality Image
  - 720X480
  - 30 Frames/sec
- WIDE BAND
  - 30Mbps (2670 Packet/sec)

The image conversation that synthesizes the reserved image of four terminals and delivers it can be offered by the reservation function in the Web base from among the terminal of two or more bases.



- A remote class and an interscholastic exchange are achieved with a high-quality two way communication.
- The Movie is displayed on a large-scale display

## System configuration



## Hardware Specification

### 6 Servers

Reserve, Control, Distribution output, Image output

**Pentium 2.4GHz**

Control and distribution

**FreeBSD4.7 Reservation Linux 9**

**Terminal DVcommXP (Customized)**

## Server Functions

Four images selected on the reservation screen are divided into four and delivered to one screen.

Can be selected 4/1 or 2/2 conversation

Synthetic processing uses an analog synthetic device.

## Technical Tips

Timing adjustment for IEEE1394 Input/Output  
Synchronization with server transaction

- Reservation, Complete

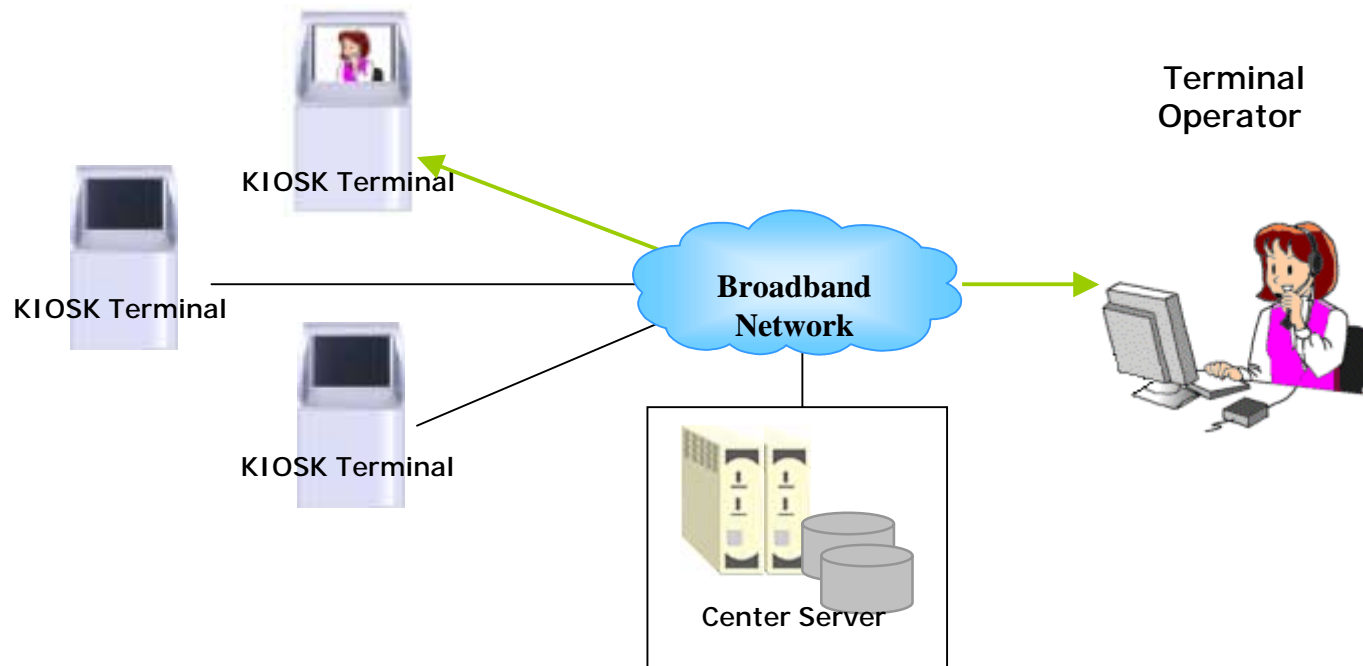
False transmission

- End transmission on non reservation user

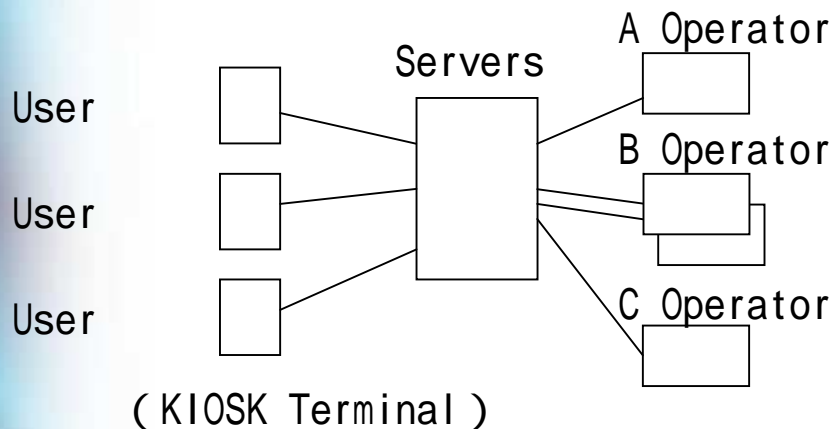
Eco cancel

- Prevent the roping on voice

Citizens can call the operator by using the touch panel of KIOSK terminal with high quality image.



## System



## Hardware

Server : Control、Reservation、Message  
 Pentium 2.4GHz  
 Control、Reservation FreeBSD4.7  
 Reservation Linux9  
 Terminals DVcommXP (customized)

## Server

Operator selection  
 Server controls the following

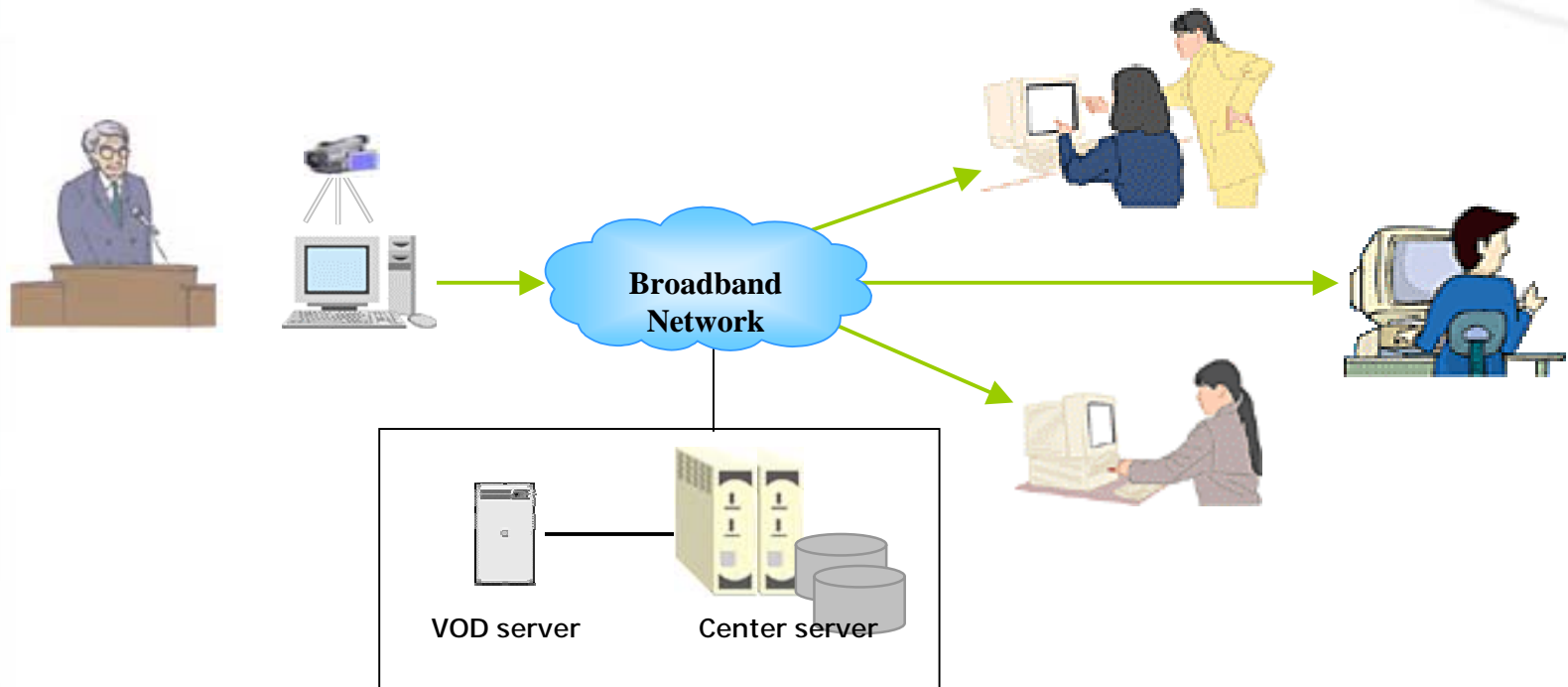
- Message such as in coming call
- interception call
- Free operator selection
- Acceptance
- Transmission start/finish

## Technical Tips

Control server redundant for concurrent session  
 (Max three connection)  
 Touch panel selection

- User can use touch panel
- Auto start/auto transmission/auto finish of terminal software

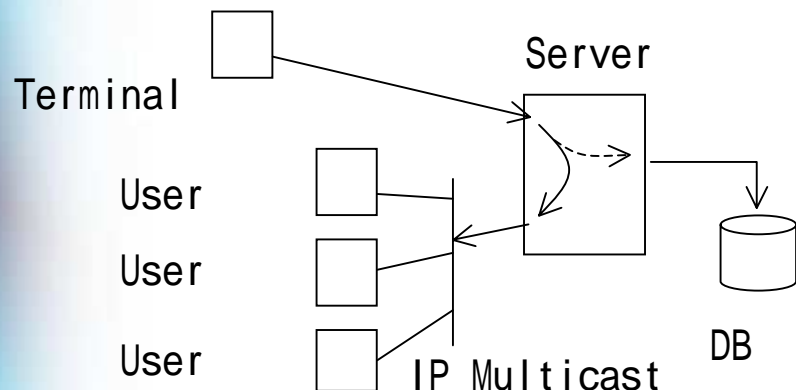
Real time transmission from any terminal with multicast on specific time by reservation function.



- Not only the live broad cast on conference and seminar, but also the natural disaster monitoring.
- Video record, broadcast.

# Image Relay Function continue

## System



## Hardware

Server : Relay、Reservation、File  
 Pentium 2.4GHz  
 Relay FreeBSD4.7 Reservation Linux9  
 File Windows2000  
 Terminal DVcommXP

## Server

The image will be relayed to the multicast from the terminal based on the reservation.

The image will be encoded as AVI and be stored at DB.

## Technical Tips

Synchronization with server transaction  
 - Reservation, Complete  
 Coexistent with multipoint dialog system  
 ( Exclusive Reservation )  
 DV to AVI format  
 Simplify the menu buttons

System	Client	Client Function	Notice
Terminal (Client PC)	DVcommXP	<ul style="list-style-type: none"> <li>• New sub window</li> <li>• menu bar to be hidden</li> <li>• Disconnection by RTCP</li> </ul>	Auto star/finish by application rancher
KIOSK		<ul style="list-style-type: none"> <li>• New sub window</li> <li>• menu bar to be hidden</li> <li>• Disconnection control by RTCP</li> <li>• Auto disconnection on non transmission</li> </ul>	IP address be changed by over write of registry

# Summary

## (1)About Services

① It is possible to construct it with respect of the network composition as the wideband application effectively by unifying to the regional Intranet construction and having introduced it.

②Dialog with higher quality than normal TV.

## (2)Future plan

① Simple installation and more cost effective by digitalizing the image server.

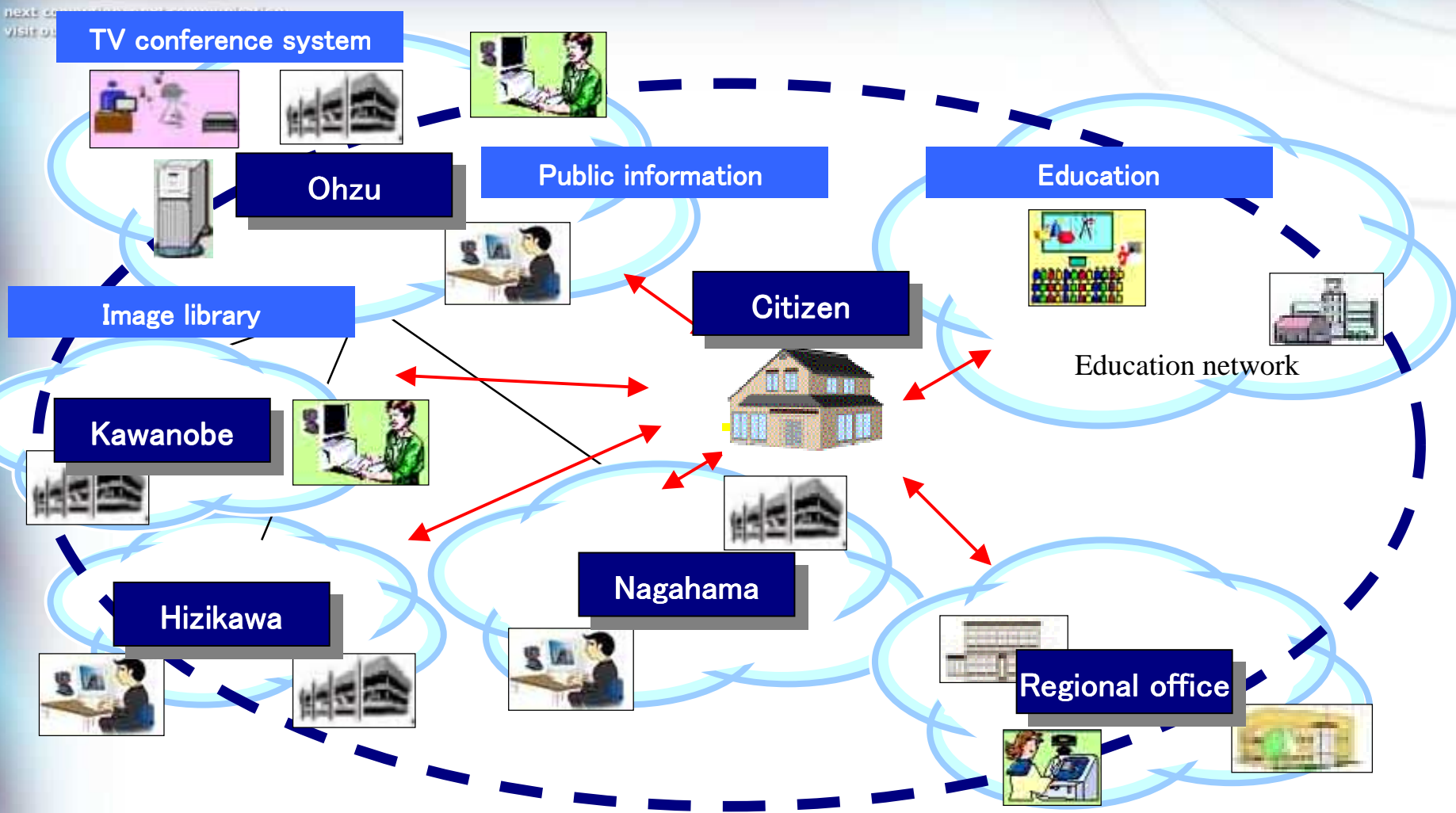
② Target the medical care and natural disaster monitoring.



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# Reference

# Ohzu-Kita network

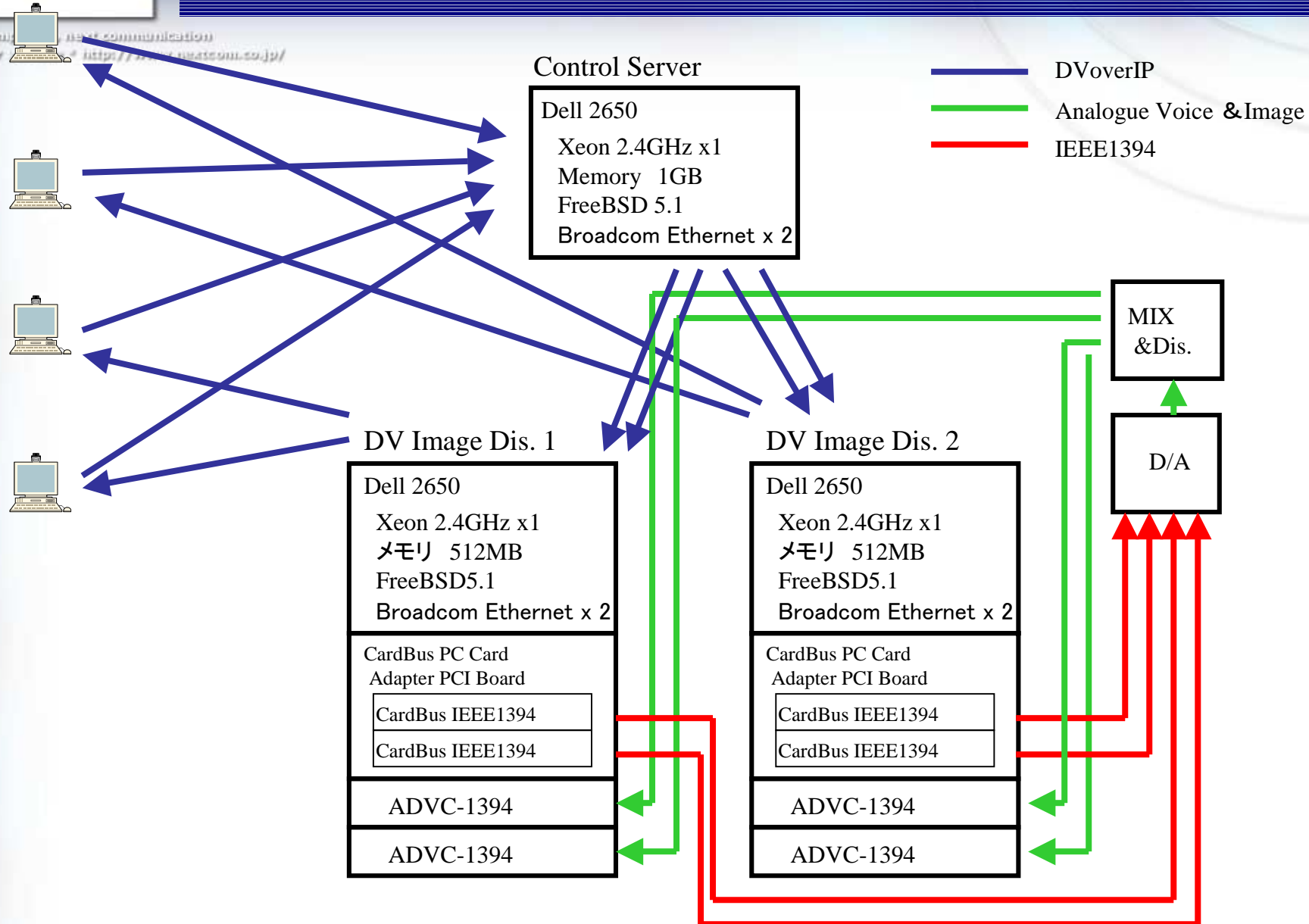


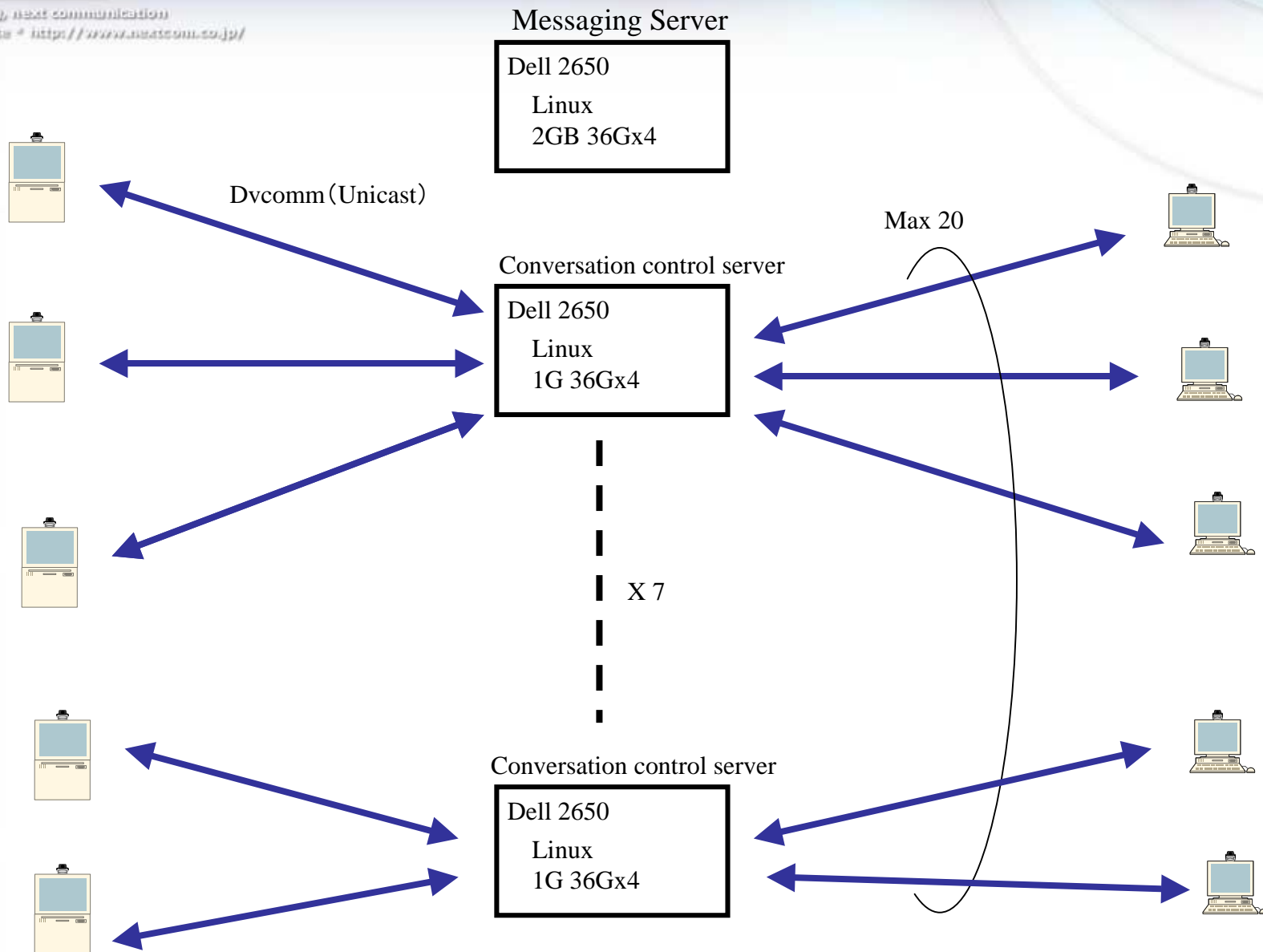
◆97 of total regional offices. 37 out of 97 are educational facilities.

◆48 of KIOST, 127 of IPPhone

## ①TV Conference System

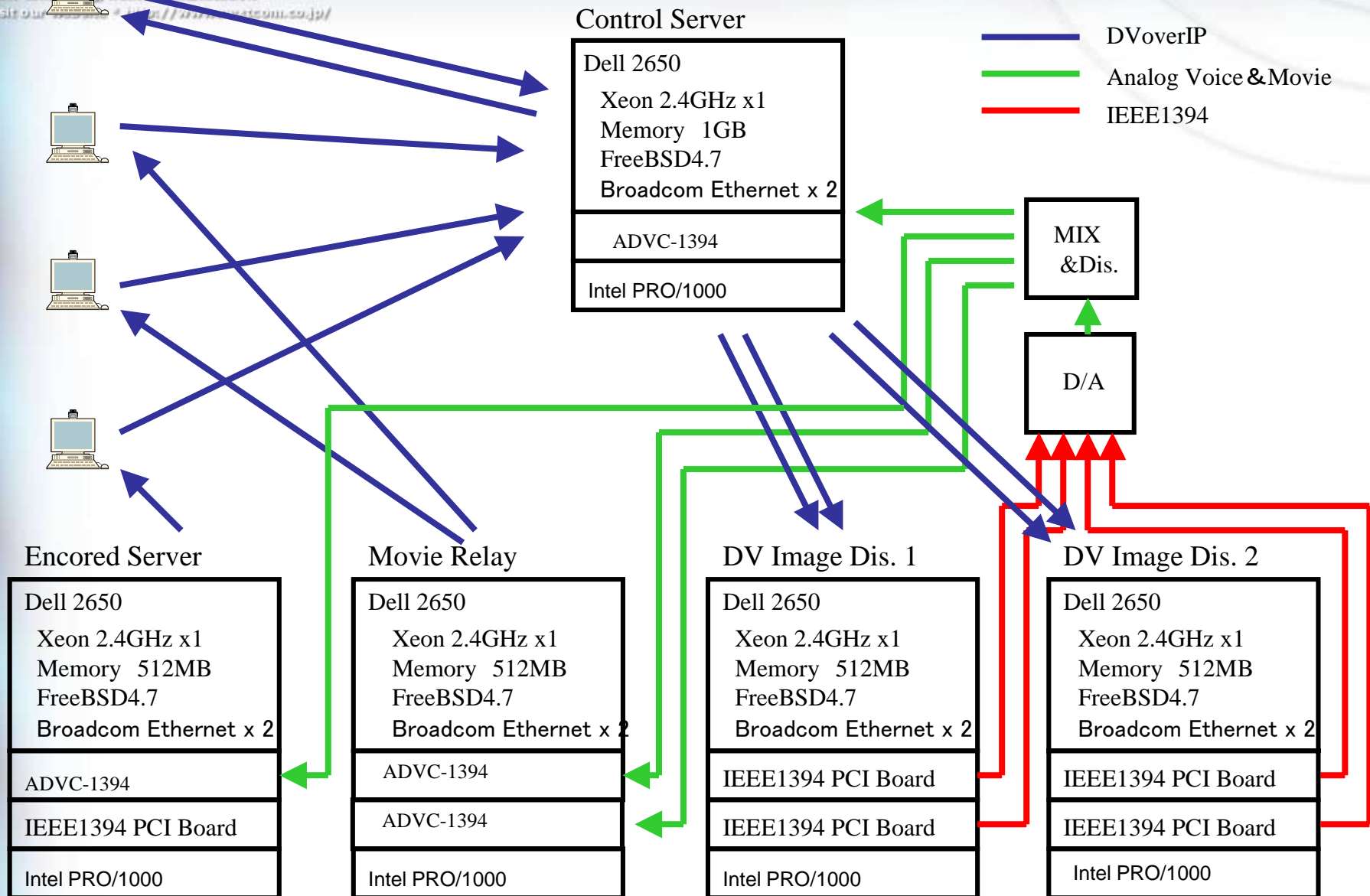
next com  
visit our  
next communication  
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## ③Relay System ( Composition chart )

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## ④delivery system (Composition chart)

